Learn, Innovate, Improve: A practice guide for enhancing programs and improving lives

Michelle Derr

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Primary Author

Michelle Derr, Ph.D.

Contributors

Anna Mastri, Ph.D.

Jonathan McCay

Alex Stanczyk, Ph.D.

Rebecca Dunn

Ryan Ruggiero

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Learn, Innovate, Improve: A practice guide for enhancing programs and improving lives

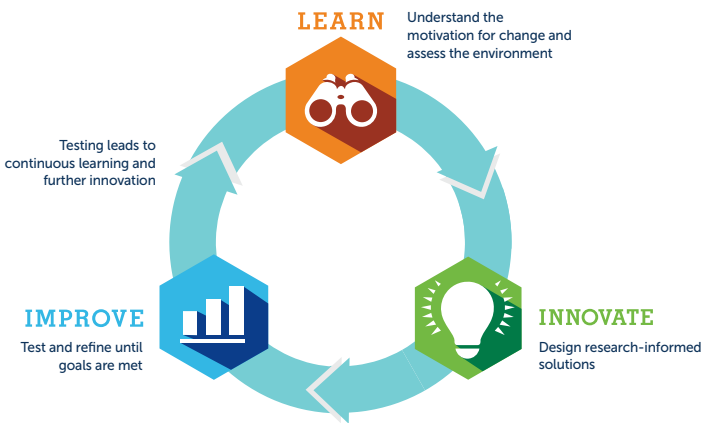
When they are confronted by urgent problems, human services professionals are often required to seek quick solutions. Urgent problems are often complicated, however. Pausing and then strategically solving problems can be beneficial to those affected by the problems. Adopting a solution prematurely, however, increases the risk of not solving a problem, or worse, tackling the wrong problem.

This practice guide can help program leaders make evidence-driven decisions as they manage change. It is designed primarily for people who are thinking about or implementing a program change, including those operating Temporary Assistance for Needy Families (TANF) or workforce programs. The guide is intended to supplement a partnership with a research or technical assistance (TA) support team, which may be either external to the program or in house. Mathematica and The Adjacent Possible developed this practice guide under Project IMPROVE, supported by the Office of Family Assistance.[5] The Learn, Innovate, Improve (LI^2) framework LI^2 and the guide can be used for program improvement, evaluation TA, or formative evaluation.

Introduction

The LI^2 framework and process are the focus of this guide. Developed by Mathematica in collaboration with practitioners and the Office of Planning, Research and Evaluation (OPRE), LI^2 is built on the recognition that leaders need credible information quickly to make strategic decisions.[1] Researchers can play a critical role in both generating the evidence practitioners need and helping them access it to make evidence-informed decisions. Researchers can also play a critical role in using evidence to successfully implement sustainable change. Yet, there is often a disconnect between how researchers operate and what practitioners need.

LI^2 is an evidence-driven framework and process for change. It is designed to unite us—practitioners and researchers—in working toward a common goal: building evidence to improve lives (Box 1). LI^2 builds on the strengths of practitioners like you, with on-the-ground experience and a clear understanding of program and practice needs, and on the strengths of researchers like us, with access to evidence and analytic methods. When researchers work together, our contributions can generate



evidence that improves programs, the field of research, and, ultimately, the outcomes for people and families.

This practice guide outlines the building blocks of LI² and then dives deeper into each phase of the process: Learn, Innovate, and Improve. Within each phase, your research/TA support team describes the objectives, common and illustrative activities, analytic methods, and tools, and then highlights potential human-centered design activities. Throughout the guide, your research/TA support team shares examples of how TANF and workforce programs have used LI² to generate innovative solutions to everyday problems. For example, LI² can be used to change a program, design an intervention, implement an evidence-based practice, test an innovative strategy, or engage in continuous program improvement (Box 2). The analytic approach and quick iterative cycles build in reflection, problem solving, and strategy, which can improve the overall quality and timeliness of change.

Box 1. The three phases of LI²

LI² typically begins with examining the motivation for change and assessing a program's readiness for change (**Learn**). The Learn phase is generally followed by innovation to specify the core components of the proposed solution, drawing on the best available research and science (**Innovate**). During this phase, your research/TA support team co-develops with you road maps for change to articulate the activities programs will undertake and the results they expect. Then, programs often try out the innovation on a small scale and collect and analyze feedback to determine what is and is not working well (**Improve**). These small-scale pilots often lead to changes that improve and strengthen implementation of the innovation. Most teams typically start with the Learn phase, but some teams begin with the Improve phase as a method for continuous improvement. ◢

Box 2. How others have used LI²

- **Make a program change.** In Adams County, Colorado, county staff in partnership with Mathematica used LI² to create outreach strategies to increase attendance at the TANF orientation and initial case management appointments. Using a combination of outreach calls and email reminders to a small group of participants, staff improved those participants' attendance rate from 51 to 64 percent at orientation (see brief). After expanding the outreach strategies to everyone, staff reported a steady 80 percent attendance rate a year later. Staff in La Plata County, Colorado, designed an innovative solution using LI² to increase engagement—coaching participants while transporting them in a county vehicle to engage with other service providers in the community (see brief).
- **Design an intervention.** Mathematica, in partnership with social science experts and local TANF programs, used LI² to design and develop Goal4 It!,™ a science-informed, motivation-driven model for helping people make progress on their goals (see the Goal4 It!™ website).
- **Implement an evidence-based practice.** In partnership with the Center on the Developing Child at Harvard University's Frontiers of Innovation initiative, Dr. Gabriele Oettingen and Mathematica worked to adapt, implement, and conduct tests of an evidence-based goal achievement practice called WOOP (Wish, Outcome, Obstacle, Plan) in three TANF programs (see brief).
- **Improve a business process.** Like many TANF programs, Philadelphia Works, Inc., required participants to complete an overwhelming amount of paperwork, which, according to staff, interfered with quality service delivery. Using LI², Mathematica worked with program staff and state Department of Human Services leaders to reduce the amount of paperwork in the first appointment from between 50 and 80 pages to 5pages. The team estimated that the change saved roughly 20,000 hours of staff and participant time annually(see brief).
- **Increase enrollment in a randomized controlled trial.** Two sites engaged in a randomized controlled trial of employment-focused coaching were struggling with low enrollment. Using LI², program leaders and coaches collaborated with the Mathematica team to analyze the bottlenecks to enrollment and co-design innovative solutions. ◢

Building blocks of LI^2

LI^2 draws primarily from implementation science, human-centered design, and improvement processes—to help you successfully navigate the adaptive and technical challenges of change:

- **Implementation science** is a body of research on how to successfully implement, replicate, sustain, and scale evidence-based practices. It draws on analytic methods and existing evidence to define solutions and develop change strategies to support consistent and high quality implementation of these solutions (Nilsen 2015; Fixsen et al. 2005).
- **Human-centered design** is a discipline that places people at the center of innovation and program change. As part of the change process, it draws on the principles of empathy, co-creation, and iteration (that is, the process of repeating an action to generate an outcome), among others (Liedtka et al. 2017).[2]
- **Improvement processes** such as Plan, Do, Study, Act (Taylor et al. 2014) and the Translational Science Model (now called the IDEAS Impact Framework™) inspired the iterative, systematic nature of LI^2 as an evidence-building improvement process.

Drawing on these and other approaches, LI^2 is characterized by four key features—co-creation, evidence, iteration, and impact.

Co-creation builds trust and consensus in identifying one or several problems and generating responsive, sustainable solutions. Co-creation removes the "arm's distance" relationship between researchers and practitioners and increases key partners' buy-in. LI^2 is often a collaborative process led by a research/TA support team—it emphasizes doing "with" rather than "for" people. Including diverse perspectives, such as those of experts who have lived experience with operating and using employment services, supports change grounded in what people value and need. This inclusive approach helps define the problem, design solutions, and test and refine those solutions.

Evidence guides every stage of the LI^2 process. Evidence is both an input and an output of the co-creative work. LI^2 helps you use and build evidence in two ways by (1) making evidence accessible and (2) building your analytic capabilities. Where there are gaps in evidence, your research/TA support team might work with you to draw on research from other disciplines or practice wisdom. Once a change is implemented, your research/TA support team coaches you to use analytic methods to gauge how well the change worked and for whom. This approach gives you the tools and knowledge to make evidence-informed decisions in your program and build evidence that might benefit the field.

The **iterative**, fail-fast approach of LI^2 promotes a learning culture in your organization and strengthens the solution you design. Change is often scaled up too early or too quickly, resulting in poorly designed and executed interventions and "change fatigue" among staff. LI^2 builds in a series of low-burden, small-scale, quick-turnaround steps to test and refine parts of a solution rather than testing the whole solution at once. Testing early and often, when the stakes are low and the scale is small, helps pinpoint challenges, allowing them to be addressed before full implementation. Engaging people affected by the change, including staff and program participants, also increases their buy-in while sharpening a focus on equity (creating opportunities for those marginalized) and inclusivity (incorporating diverse voices in the process).

Finally, LI^2 is intended to produce an **impact** on organizations and people. Your research/TA support team engages in this work with you to tackle a specific problem and ultimately achieve impacts on priority outcomes (Box 2). Yet, the process can also spark broader change in your organizational culture, practices, leaders, and staff who adopt it. LI^2 is designed to cultivate a mindset and skill set that you can draw on beyond the engagement with the research/TA support team. Building the capabilities of your organization and staff contributes to sustainable change driven by your needs and the people you serve.

Learn phase

"Develop a passion for learning. If you do, you will never cease to grow."

Anthony J. D'Angelo, Innovator within Higher Education

Overview

The Learn phase draws on a set of activities and collaborative exchanges to identify and develop a deeper understanding of the problems at hand, raise awareness about the organizational or program context, and energize and mobilize people to work toward a common goal. Assessing organizational readiness for change is a critical step in the Learn phase. Assessment findings can drive a strategic approach to implementation and can help tailor the solution to fit the program context. Otherwise, the solution will likely fail (Box 3). The Learn phase is also a time to cultivate strong working relationships built on trust that strengthen and endure over time.

Box 3. Organizational readiness for change

To achieve impact, organizations and individuals need to be psychologically and behaviorally ready, willing, and able to execute the solution and sustain it over time. Otherwise, the solution will likely fail. Experts suggest that between 50 and 70 percent of change initiatives fail largely because of organizational factors such as poor leadership, competing organizational priorities, weak planning, and misaligned rewards systems, among other factors (Nohria and Beer 2000). ◢

Objectives

The primary objectives of the Learn phase are threefold—(1) to identify, clarify, and prioritize the problem; (2) to assess the environment; and (3) to identify and engage partners. Coalescing a team around a common problem—a problem that all team members participated in identifying—sparks motivation and excitement. Before moving forward, however, a team needs to be clear about the context in which the change will take place. Assessing the environment serves two purposes: (1) to determine the organization's and the team's readiness for change and (2) to identify factors and people that might influence the change process or the success of the solution.

Learn phase–Objectives, products, and benefits

Objectives

- Identify, clarify, and prioritize problem
- Assess the environment (context) to:
  - Determine the organization's and the team's readiness for change
  - Identify factors and people that might influence—either by helping or hindering—the change process or potential solutions
- Identify and engage partners

Potential products

- Plan for executing Learn phase activities, including data collection and analysis
- Detailed explanation and common agreement about the problem to solve
- Description of the environment
- List of factors and people that might help or hinder change process or solutions
- Clearly defined teams and roles

Benefits

- Teams are more motivated to address a common problem
- The organization is more aware of the opportunities and resources in the environment that might facilitate change
- The organization is better equipped to respond to aspects of the environment that could hinder change
- Team members have greater capacity to tackle the problem now and address future problems

The objectives of the Learn phase are mutually reinforcing—they go hand in hand. For example, assessing the environment often helps define and explain the root problem, which often differs from what was initially assumed. In turn, by identifying the problem, you can assess the environment with more clarity. The research/TA support team can help your team balance both objectives.

The process

Learning is primarily about listening. It's also about asking the right questions to cultivate a deeper understanding of what people need and the environment in which they operate. To achieve the objectives of the Learn phase, practitioners and researchers engage in four key tasks—focus; mobilize and organize teams; develop and execute a Learn plan; and reflect on and prioritize problems.

Focus—what is "one simple thing" you want to tackle? Human services and workforce leaders undertake the change process for a variety of reasons. They may be in crisis, they may be embarking on a program redesign, or they may have heard about an innovative practice they want to replicate. Our best advice is to **pause**. Take a deep breath. Be certain you focus sharply on the change you envision or the one simple change you want to make and the problem(s) it will solve (for example, unclear communication, staff burnout, or low customer engagement). This one simple thing, which is often not as easy as it might appear, anchors the work during the Learn phase and provides focus. Often, that one thing changes by the end of the Learn phase, but data and new learning from Learn phase activities guide you to the solution you need.

Tip: Get and stay focused

Balancing discipline and flexibility is critical during the Learn phase. Focus on what matters. Resist the temptation to tackle too many problems at once. Instead, start with a simple, targeted problem. Move through the Innovate and Improve phases. Then, cycle back to the Learn phase to prioritize and tackle the next problem.

Mobilize and organize teams. Co-creation works best when teams are clearly defined in terms of types of teams, each team's purpose, the people on each team, and team members' roles and responsibilities. Typically, there are at least two teams—an **implementation team** made up of four to eight practitioners who are leading the work within the site and a **research/TA support team** made up of two or three people who facilitate the LI^2 process. Depending on the structure of your program, other teams might play a targeted or as-needed role in the change. Examples include a senior leadership team (those who are the ultimate decision makers), a cross-provider implementation team (a group of provider administrators who are responsible for implementation within their respective organizations), and a practice support team (those who provide feedback on, implement, and test the change), among others. Regardless of the number and types of teams, all team members should be clear about their purpose and the roles and responsibilities of all team members.

Tip: Be inclusive

Including diverse perspectives, at several levels within the organization(s), improves the quality and accuracy of the Learn phase. Pay attention to who is and is not at the table. Narrowing the list is often easier, but it could jeopardize the ability to remedy the real problem.

Develop and execute a Learn plan. During the Learn phase, the teams co-create a detailed, feasible, and responsive plan based on the narrowed area of focus (the "one simple thing"). The plan is a working document that keeps the process on track and allows for adaptation in response to new learning. For small changes, the plan may be simple. For more complex and extensive change, the plan can specify a set of challenging activities, particularly if teams have little experience with research or other analytic methods. Box 4 outlines some potential steps in creating a plan. Table 1 provides a menu of analytic methods and activities. Turn to your research/TA support team for advice and guidance. When developing a plan, think about

the resources you have available, the timeline for the change, your organizational research capacity, and the availability and quality of existing data.

Reflect on and prioritize problems. The final step is to reflect on the Learn findings and prioritize the problems to solve in preparation for the Innovate phase. The implementation team and the research/TA support team typically complete this step together. As the teams reflect and prioritize, they may return to earlier activities to define a targeted area in greater detail. The process is iterative.

How do you know when the Learn phase is complete? On one hand, there is always more to learn. On the other hand, the team needs to jump in at some point and start generating and testing solutions. Transitioning from the Learn phase to the Innovate phase typically occurs when there is some agreement on the problems to solve and a greater awareness of how the problems inhibit your organization or program.

The Learn phase culminates with one or more products that capture the findings and create focus for designing the Innovate phase (for example, a description of the environment, summary of problems). You can return to these findings and cycle back through Learn phases to solve additional problems.

Tips

Draw on existing information, tools, and resources. Keep the Learn phase doable. Existing program materials, reports, and administrative or program data can all be excellent sources for better understanding a perceived problem. You can also draw from information the team has already collected.

Create safe space. Psychological safety is an essential ingredient in co-creation. This includes the space to share without judgment or retribution and enables leaders to receive and accept potentially negative feedback (Edmondson 2019). Creating safe space during the Learn phase establishes the culture vital for a successful learning environment, which is essential throughout the LI^2 engagement. It may include setting ground rules at the start of meetings and protecting the confidentiality of group members.

Box 4. Potential elements of a Learn plan

A well-defined plan can make the Learn phase fun and productive. Here are potential elements of a plan:

Learning objectives. The plan is framed by a series of guiding questions grounded in the phase's core objectives

- **Identify, clarify, and prioritize the problem.** What problems are your agency and your research/TA support team trying to solve? What do we know about them? Whom do they affect, how, when? Which are the highest priority? What data do your agency and your research/TA support team have to support our understanding of the problems? Where are the gaps in our understanding?
- **Assess the environment.** What is the climate and context of the change? What factors and people might help or hinder the change process or potential outcomes and how? Who are the major partners? What is their motivation for change? Who are the leaders and champions of this work? Who might obstruct it?

These questions are guideposts and define what the implementation team hopes to achieve during the Learn phase. They help identify the topics to explore during the Learn phase and the best methods and activities for such exploration.

Methods or activities. After clarifying learning objectives, you can draw from a menu of traditional research and other methods and activities that will answer the questions in the learning objectives Table 1). These include **co-creative engagements** (such as human-centered design sessions and strategic planning), **qualitative data collection** (such as interviews, focus groups, and observations), **mapping exercises** (such as process maps and collaborator maps), and **descriptive assessments and analysis** (such as organizational assessments and analysis of administrative data). For each activity, the team might define the objectives of the activity and how it will gather information to meet the objectives.

Timing. Pace is critical to a successful Learn phase. Moving too quickly runs the risk of losing buy-in from important partners, including program staff. Moving too slowly can prolong the process—people may lose interest. Equally important is the time allotted for each method or activity, which should be driven by the objectives of the activity.

Location and format. Most Learn sessions include a combination of virtual and in-person exchanges. When in person, particularly for human-centered design or strategic planning sessions, the right physical environment can influence the productivity and mood of the group. The in-person spaces should be safe and inviting (for example, with lots of area for moving around the room and, if possible, natural light). When using technology, it is important to pay attention to people's access to and comfort level with technology.

People. Teams should give careful thought to who might facilitate the Learn phase activities, especially for the human-centered design and strategic planning sessions. Sometimes it is helpful for the program leader to facilitate sessions in order to build trust with team members. Other times warrant the need for an outsider to ensure people feel comfortable speaking freely.

Gathering information, analyzing it, and reporting Learn phase findings. After gathering information to answer the learning objectives, the team arrives at a common understanding of the Learn findings. Typically, the program implementation team reports the findings to the partners who contributed to the process, thereby ensuring the interpretation of the information is accurate. Overall, the products of the Learn phase should be accessible, action-oriented, and informed by the data. ◢

Table 1. Menu of analytic methods and activities for the Learn phase

Activity/method	Description
Co-creative engagements	
Human-centered design sessions	Human-centered design is a framework and set of activities for engaging people in co-designing from the user's perspective. Common activities for the Learn phase include Rose, thorn, bud; What's on your radar; and Problem Tree Analysis.
Strategic planning	Strategic planning sessions define the strategy and direction of the work. Initially, the sessions typically provide a way for everyone involved to agree on the direction of the work. Periodically during the Innovate and Improve phases, the sessions keep the work on track.
Qualitative methods	
Interviews (group and individual)	These involve individual and small-group interviews with key collaborators (typically two or three people per interview). Interviewers use a standardized list of questions to gain insight into both the environment and perceptions about existing problems.
Focus groups	Focus groups include six to eight collaborators and are structured to spark exchanges between group members. Facilitators help generate ideas and insights around a key set of topics.
Observations	These typically take place in person, with observers sitting in on activities conducted within a program or across agencies (for example, orientations, intake, coaching sessions, staff meetings, community partner meetings). Observations can help build understanding of the problem or context.
Review of existing materials	Organizational charts, policies and procedures, outcome reports, and other documents may shed light on the environment or existing program challenges.
Mapping exercises	
Process maps	Process maps help identify the people and processes participants encounter as they move through a program. They can help identify potential gaps or bottlenecks in service delivery.
Collaborator maps	This tool identifies all the people who are involved in a system, program, or service component, as opposed to processes. It can also gather feedback on the relationships among collaborators.
Resource maps	For programs focused on service coordination or integration, resource maps can identify gaps and duplication in existing resources or activities.
Descriptive assessments and analysis	
Organizational assessments	Programs might use structured tools to assess their capabilities and readiness for change. They might also use assessments to identify targeted areas for improvement.
Surveys	Systematic data collection that uses electronic tools (for example, Google Forms, SurveyMonkey) or paper instruments that collect feedback from key collaborators can help organizations identify problems or assess the environment. Surveys are typically self-administered.
Analysis of existing data	Readily available administrative or other program data can deepen the understanding of a problem or help in assessing the environment.

Innovate phase

"For good ideas and true innovation, you need human interaction, conflict, argument, and debate."

Dr. Margaret Heffernan, CEO and author

Overview

Solving problems can be the most difficult and the most energizing step in LI[2]. The Innovate phase involves generating ideas and putting those ideas into practice. It's not uncommon to toggle back and forth between generating ideas and defining your solutions before landing on a final solution.

A successful Innovate phase requires the right people in the right conditions. Working in teams enhances the process and solutions and generates buy-in; however, teams can be challenging to orchestrate. Be strategic. Include your creative "outside the box" thinkers and your tactical gatekeepers who can push the team to define how a solution will work in practice. Outside partners can also add valuable perspective to those in the trenches who may be too close to the problem. The partners may be the same group involved during the Learn phase or a different group; in either case, it is essential to include those who will help you achieve your objectives.

Designing sound, innovative solutions requires the right conditions—the time required to think, the opportunity to try, and the safety to fail. You need to weigh the costs of investing time in generating and refining good solutions against the cost of the problems you are trying to fix. In addition, people need an environment where they can speak freely and recognize they can fail without fear of penalty. Creating this kind of environment—which experts call psychological safety—pays dividends in all phases of LI[2] and cultivates a learning organization more broadly (Edmondson 2019).[3]

Objectives

A successful Innovate phase leaves your team with a clear vision and plan for how to address the targeted problems. The objectives are threefold. First, teams design new solutions or draw from existing evidence-driven solutions to the targeted problems. Second, they create a plan for consistent and well-executed implementation of the solutions. The final objective is to identify measures of success that are well-aligned with the solutions.

Innovate phase–Objectives, potential products, and benefits

Objectives

- Design new or draw from existing evidence-driven solutions to the targeted problem
- Create either a plan detailing the change strategies or a plan for collaborators' consistent and well-executed implementation of solutions
- Identify success measures that are properly aligned with solutions

Potential products

- Summary of existing evidence, practice wisdom, and resources available to the program
- Road map for change, including a list of near- and long-term outcomes and how to measure them (Appendix A)

Benefits

- Teams are more motivated to achieve a common goal
- Teams are more committed to the change process with greater buy-in
- Teams have a greater understanding of evidence-driven solutions and outcomes related to the targeted problem
- Teams are more capable of using analytic methods to tackle everyday problems

The process

The Innovate phase is hard, fun, and energizing—all in one. The process starts by combing through existing evidence (when possible) and ends with a laser-sharp, precise definition of the solution, with a lot of messy, creative outside-the-box work in between. Our best advice—blow up the box! The process involves a wide range of possible activities—a scan of existing evidence and resources for potential solutions, the adaptation of existing or definition of new solutions, the formulation of a plan for implementing and sustaining the solutions, the specification of measures of success, and mapping of the change.

Scan existing evidence and resources for potential solutions. Before moving forward, pause to see what has already been done. There is no need to reinvent the wheel. Even a quick scan of existing evidence and resources for potential solutions to the problem defined in the Learn phase may inspire innovation (Box 5). You may find existing evidence-based solutions with proven success that are applicable to your problem. You could also look at how other disciplines or practice areas have solved problems like yours.[4] Solutions might also exist in your community—look there as well. Turn to your research/TA support team to scan the evidence or point out the most important studies. When good evidence isn't available, you may need to rely on practice wisdom to generate solutions.

Co-create or adapt existing evidence-driven, human-centered solutions—the "What." After exploring the evidence, you are ready to begin designing solutions. If you found solutions that address your needs, then your next step is to tailor the solution to fit your environment. If evidence-based practices don't exist, then you may need to define a new evidence-driven solution by drawing from evidence in other disciplines or rely on practice wisdom from people with lived experience.

Box 5. Where do I find good evidence?

The Administration for Children and Families, Office of Research, Planning and Evaluation and the U.S. Department of Labor support two employment-focused evidence clearinghouses where people can search for evidence-based practices.

Pathways to Work Evidence Clearinghouse: https://pathwaystowork.acf.hhs.gov/

Clearinghouse for Labor Evaluation and Research (CLEAR): https://clear.dol.gov/

In defining an evidence-driven solution, you need to ask, "What do we want people to do differently that might generate a better outcome?" Your research/TA support team calls this the "What" (TCI 2020). It includes identifying who needs to change (such as program leaders, direct service staff, program participants) and what they need to succeed (such as knowledge, skills, motivation). For example, direct service staff implementing a coaching model may need to build facilitation skills and sharpen their ability to ask open-ended questions to effectively coach rather than merely direct participants. Participants may need to learn and practice skills for identifying their goals and developing a plan to achieve them.

Generating solutions that emphasize behavioral change requires understanding the mindset and experience of users. What motivates them? What are their capabilities? How might they react to change? Engaging teams and partners in human-centered design activities generates empathy and understanding that may lead to better solutions. These activities, which are a form of participatory research, are easy to use, can generate creative solutions quickly, and lend themselves to in-person or virtual facilitation (Box 6). Designing the "What" or evidence-driven solutions can be more involved, depending on the complexity of the problem and solutions. Human-centered design can be used during any phase of LI^2, but it can be particularly useful during the Innovate phase.

A productive design session for a new evidence-driven solution in the Innovate phase includes lots of idea generation (known as divergent thinking) combined with focus and prioritization (convergent thinking). In such a design session, the implementation team can define the solution by looking at the who, what, where, how, and when. The "four Ps" offer a similar approach to formulating the "What":

- **Principles.** These are the underlying values or beliefs behind what you want people to do differently, such as adopting an emphasis on participant choice (rather than staff-directed interactions) or using a motivation-driven approach (instead of a compliance-oriented one).
- **People.** In thinking about the people, revisit the key partners identified during the Learn phase. Winnow down the list of partners to determine who will be directly involved with the "What" or evidence-driven solution, perhaps including implementers such as program leaders and staff, program participants, or community partners.
- **Processes and policies.** People change their behaviors when they have opportunities to practice new ones (Michie at el. 2011). Teams can design policies and processes that reinforce behaviors, create habits, and develop skills over time. For example, a program might hold regular coaching circles to troubleshoot and model coaching. Program staff might regularly model a process for setting and achieving goals with program participants and help them build self-regulation skills by practicing the process.
- **Products.** These include curricula, mobile apps, program tools, or guidance that helps support the change you are implementing.

Box 6. The value of human-centered design

- Activities are designed to engage all voices in the room through a mix of individual brainstorming and group discussion.
- Divergent brainstorming activities tap the creative potential of participants, inviting outside-the-box thinking and testing traditional limits.
- Convergent brainstorming builds consensus and enables teams to prioritize ideas based on relevant factors.
- Design activities incorporate research methods and provide a more accessible way for you to gather data on your own. ◢

Adapting an existing evidence-based solution requires careful thought to adapt it to your environment. However, it typically isn't as labor intensive as designing something new.

Tip:

Expand on what you already have. Solutions do not need to be radical changes. They can be simple, doable steps that are just beyond what you are doing now. These small, incremental steps add up to big changes over time.

Design how to implement and sustain the solution—the "How." A good solution is not just about what you do, but also how you do it and sustain it. In other words, you need to think about, and plan for, things that might go wrong. Anticipating and addressing potential problems in implementing your solution increases the likelihood that the desired behavioral change will occur—individually and organizationally (Michie et al. 2011).

- **Identify what might go wrong when enacting the solution and what might support the change—your implementation barriers and facilitators (or influencers).** The organizational assessment from your Learn phase may shed light on some of the things that might go wrong and what might facilitate change when you try your solution. Your research/TA support team calls these implementation barriers (what hinders change) and facilitators (what helps change) (Box 7). Barriers can be the lack of motivation or buy-in from leaders or direct service staff, lack of opportunity to introduce the solution, or weak or limited

capabilities of people tasked with change. Facilitators can be committed leaders and direct service staff, a funding opportunity, a recent legislative change, or active community partners. With your solution now in mind, take a careful look at potential barriers and facilitators.

- **Make a plan to address the things that might go wrong before they do—your change strategies.** Your strategies should directly map to an expected or experienced barrier. For example, if motivation is an issue, you could use champions to talk about the benefits of the change. Don't just rely on training and TA to implement the change—those strategies address knowledge and skills gaps but not barriers related to opportunities and motivation.

Box 7. Identifying implementation barriers: COM-B (Capabilities, Opportunity, Motivation-Behavior)

Behavioral change requires three key ingredients—the need to be capable of change (have the necessary knowledge, skills, decision processes, and habits), the need to have the opportunity to change (operate in an environment that supports that change), and the need to be motivated to change (have the fuel that drives action) (Michie at el. 2011). The COM-B—Capabilities, Opportunities, Motivation-Behavior—is a tool that practitioners can use to diagnose potential implementation barriers and develop strategies to address them (see COM-B). ◢

Define success (or performance) measures.
The famous baseball player and manager Yogi Berra once said, "If you don't know where you're going, you'll end up someplace else." Defining near- and long-term behaviors not only anchors the change—what is our ultimate goal?—but also evokes motivation in team members. With respect to implementing evidence-based practices, performance measures are often well defined and can include outcomes such as an increase in service engagement, job placement, or retention or success in obtaining an educational credential. When innovating, the implementation team may need to turn to the research/TA support team for help to define success measures.

Map the change. The final task in the Innovate phase is to develop a road map for change (Appendix A). The road map comprises three key elements: (1) the features of the solution or change you are implementing; (2) the change strategies you are adopting to ensure staff implement the features of the solution effectively, with the solution accounting for implementation barriers and facilitators; and (3) the measures of success. The road map for change serves two purposes. First, it ensures that the solution is well-aligned with the success measures you expect to see. Second, it is used to develop the plan to test the solution during the Improve phase. Specifically, the team looks at the components of the solution and how to implement and sustain it in order to define the learning objectives for the test. Table 2 is an example of a road map for change for implementing a motivation-driven approach to an upfront and ongoing assessment of participants who receive TANF assistance . It is designed to help direct service staff engage participants in meaningful conversations about participants' education and employment goals.

Table 2. Example of a road map for change: Motivation Driven Assessment

Intervention (What)	Change strategies (How)	Participant outcomes
Motivation Driven Assessment (MDA) tool Well-defined process and guidance for conducting MDA Staff competencies and behaviors for facilitating MDA	Training and technical assistance to supervisors and staff (capabilities) Peer-to-peer observations (capabilities, opportunities, motivation) Team huddles to practice and problem solve challenges (capabilities, opportunities, motivation)	**Intermediate** Improvements in self-regulation/ life skills (motivation, planning, self-efficacy, etc.) Increase in program engagement Increase in job placement and retention Completion of education and training programs **Long-term** Improvement in job advancement and earnings
	Influencers (implementation barriers and facilitators)	
	Defaulting to a transactional instead of a motivational approach Resistance to change, "we already do this" Taking a one-and-done rather than ongoing approach to assessment	

Improve phase

"Improvement at anything is based on thousands of tiny failures, and the magnitude of your success is based on how many times you've failed at something."

Mark Manson, Entrepreneur

Overview

Too often, leaders implement a solution and fail to reflect on the success of it. Periodically pausing to measure near-term behavioral changes can generate evidence to determine if the solution is on track. Often, the Improve phase begins with a road test, which involves low-burden, quick-turnaround data collection from a small number of users on a core element of the solution. Getting information quickly about what seems to be working, for whom, and under what circumstances allows for strategic adaptation when the stakes are low as opposed to full implementation when the stakes are high. The practice of testing a small piece of the solution rather than all parts of it also generates data about what might drive success. The team can decide whether to revise or abandon practices that show little or no promise. The iterative, "fail-fast" approach informed by quick feedback from users of the solution—for example, your leaders or staff—has added benefits in that it increases their buy-in and reduces their change fatigue.

The Improve phase can follow the Innovate phase, or you can start with the Improve phase as a method for continuous improvement. When Improve is the starting place, it may be used to determine if a solution is still working as intended. The purpose of the phase is still the same—to generate evidence quickly to improve the solution. After considering the findings, you might return to either the Learn or Innovate phase to collect more information about the root problem or to redesign the solution.

If you feel overwhelmed by the testing process, you aren't alone. Rely on your research/TA support team for guidance. The team can walk you through the process and make testing doable and fun. Over time, you will build the capabilities to test on your own.

Objectives

The Improve phase has three objectives. First, it is designed to implement and strategically test one of the pieces of the solution and how the program will implement and sustain the solution. Second, it aims to reveal what shows promise while continuing to refine and test (or abandon) the solution until it achieves impact, potentially pushing you back to the Learn or Innovate phase. The final objective, which is often overlooked, is to continue to build evidence and share findings with others. Getting the word out about promising or evidence-based practices supports a learning culture within programs and the broader field.

Improve phase–Objectives, potential products, and benefits

Objectives

- Implement and test the solution and change strategies
- Reflect, revise, scale, and retest to achieve impact and sustainability
- Build evidence for making decisions and evidence to improve the field

Potential products

- Testing plans and data collection instruments
- Summaries of key findings from each round of tests
- Recommendations for revisions after each test
- Sustainability plan

Benefits

- The solution and the change strategies improve
- The organization and people develop increased analytic capabilities to generate evidence
- Organizational culture changes in support of evidence-driven decisions
- Users buy into the solution
- The organization and users experience less change fatigue

The process

Program leaders commonly describe change as "building the plane while flying it." The Improve phase is different. It resembles a series of short flights before embarking on a transatlantic journey. Your team has some decisions to make. Are the test pilots highly engaged superusers or naysayers or a mix? How long is the test period? Which core element makes the most sense to test first? The answers depend on what the team wants to learn. In practice, the plans for implementing and testing the solution are often developed at the same time in a four-step Improve process that calls for defining a plan to test the solution, implementing the solution and executing the test, making evidence-driven decisions, and continuing to build and share evidence.

Tips

Test with precision and focus. Testing in the Improve phase differs from a traditional evaluation. At first, it is essential to focus on testing a piece rather than the full puzzle. The Improve phase is a process of trying out a solution, testing small pieces of the solution, and refining each piece until getting the solution right.

Include diverse perspectives. Determining what works and for whom requires looking at implementation of the solution from the lens of different people. Include people at different levels within the organization or partner organizations, including those with lived experience in the program and those of different racial and ethnic backgrounds, abilities, and levels of experience, among other dimensions.

Define a plan to test the solution. Much as during the Learn phase, your team will work collaboratively with the research/TA support team to develop a plan for testing the solution. The plan's focus is on testing the solution rather than on learning about the problem. Still, the plan includes similar elements—guiding questions or objectives, a testing design, data collection methods, and the approach to data analysis (Appendix B). Programs typically begin with a road test; later, they may include additional methods or activities to describe how the program is implemented or to test the effectiveness of the solution or both (Table 3). Earlier in this guide, we provided examples of how sites have structured tests during the Improve phase (Box 2).

Table 3. Examples of methods and activities for testing in the Improve phase

Method/activity	Description
Road test	A road test is an iterative (fast-cycle, incremental) pilot of one or two pieces of a solution on a small scale. It is designed to gather feedback about early implementation and refine the change.
Case study	A case study documents the components of the solution and the process of its development and refinement. The goal is to provide a detailed description of the solution and the experience of implementing the solution. Such documentation can help programs implement the solution consistently and support the spread of promising innovations.
Process analysis	Process analysis is a qualitative (descriptive) method to assess the phases and steps of a program process or procedure to understand how the inputs, outputs, and operations work and relate to one another, sometimes with a focus on diagnosing inefficiencies.
Implementation study	An implementation study describes the implementation of an intervention or program. This kind of study can be used to gauge the extent to which an intervention is implemented as intended.
Outcomes/key performance indicators analysis	Programs might use surveys or existing program data to quantitatively assess trends in program outcomes and performance over time or as compared to designated program benchmarks. The analysis provides some indication of the solution's promise but does not determine its effectiveness.
Formative impact analysis (e.g., rapid-cycle experiment) or summative impact analysis (e.g., large-scale experiment)	Testing the effectiveness of a solution requires treatment and comparison groups to evaluate the impact of a specific change on program operations. Impact analyses can be either experimental, in which case the comparison group is selected randomly, or nonexperimental, in which case the comparison group is selected in some other way. Experiments are preferable to the nonexperimental approach because the random assignment means that the comparison group is similar to the treatment group except for the program change. Rapid-cycle experiments can generate evidence on participant outcomes in a relatively short time in order to refine the program change

Implement the solution and execute the test. The Improve plan is a blueprint for executing the test. The length of time to execute the test is largely driven by the design. Road tests are typically quick—between two and six weeks, with a two-week turnaround before the next testing cycle to take stock of lessons learned. A well-crafted road map for change is a guidepost for defining how the team will implement and test the solution. User feedback is critical not only in collecting data but also in interpreting the findings. Including users' perspectives, especially the perspectives of users with lived experience in the program, makes it easier to decide what to do next—revise and retest, scale up, or abandon the solution.

Make evidence-driven decisions. An important step in the Improve phase is to bring the findings from the test back to those who provided feedback. For example, if your road test collected information from case-workers who implemented the solution, you need to present findings from the test to the participating caseworkers. As major partners, they can help make sense of the findings and provide a more comprehensive and inclusive look into whether the solution is working as hoped. From there, the implementation team can make one of the following decisions:

- **Refine the solution.** The change is on the right track but still needs some tweaking to achieve the targeted outcomes. The team will refine the change and retest.

- **Scale up.** We seem to be on the right track! The team should implement the solution with more people in more places.
- **Abandon the solution.** We thought it was a good solution, but it missed the mark. The team returns to the Learn or Innovate phase.

Continue to build and share evidence. Scaling up creates an opportunity to use more rigorous methods to test the effectiveness of the solution and to share findings with others, including the field. Figure 1 illustrates the pathway for evidence building. The research/TA support team can help you explore what type of evidence it is possible to generate and what you would need to do to generate different levels of evidence. The goal is to build evidence for your program and for the field.

Figure 1. Example of a potential pathway for evidence building

Conclusion

LI^2 is a flexible, accessible process that builds in analytic, data-driven reflection points to help practitioners develop clear intent in managing change rather than merely reacting to the need for change. Even though teams may initially need support, the aim is for LI^2 to become part of practitioners' organizational culture, with teams engaging in change on their own without help from an outside research/TA support team. Programs with internal research capacity may use this guide in partnership with practitioners within their organization to support data-driven change. The ultimate goal of LI^2 is to help practitioners use and build evidence to improve outcomes and enhance lives.

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Appendix A. Template for road map for change

Table A.1. Road map for change

Intervention (What)	Change strategies (How)	Participant outcomes
[add text]	[add text]	Intermediate [add text] Long-term [add text]
	Influencers (implementation barriers and facilitators)	
	[add text]	

Appendix B. Testing Plan Template

Agency/program: _____Test number: _____

The Improve phase of LI^2 involves testing, refining, and retesting the solution developed in the Innovate phase. Before you begin Improve, you MUST have a completed road map for change. The road map for change drives your research questions and testing plans. The road map for change specifies:

- The intervention, or the solution (the "What")
- The barriers and facilitators to change (the influencers)
- The change strategies that will leverage the facilitators to change and address the barriers to change (the "How")
- The outcomes you hope to achieve (the "success measures," which can be short-term and longer-term measures and should measure the success of the intervention AND the change strategies)

For each solution, you may conduct several tests using the same or different methods. Early tests are often "road tests." Road tests focus on just one or two components of the intervention or change strategies. For a road test, a small number of staff and clients typically participates over a short period (about four to six weeks) and provides formative feedback about their experience with the program change. Afterward, the team analyzes the data and feedback to develop concrete recommendations for refining or revising the solutions.

After the first road test, you might conduct another road test, or you might move to tests that use other methods (for example, a descriptive test or an experiment with a comparison group). In addition to using different methods, later tests may differ from road tests in two other important ways: (1) later tests might begin to focus on the solution as a whole rather than on just one or two components, and (2) later tests might investigate how the solution is linked to changes in outcomes.

For each new test, complete a NEW version of this testing template to document your plans for the test. You also need to consider if you should update the road map for change with any refinements you made to the intervention based on the results of the last test.

Remember: The goal of testing is not just to answer the question, "Does this work?" You also need to figure out HOW to get the solution to work!

What one or two components are you testing in this test?

Each test can focus on one or two components of the solution, which should be elements of the road map for change—elements of either the What or the How or both. What components are you most interested in testing at this point?

1.

2.

What factors will shape the design of the test?

Think about the context for your test. The following factors should shape your plans for the test: (1) **timeline;** (2) **capacity** of staff, that is, do staff on the team have the appropriate time and skills to conduct the test; what level of support do they need from an outside research/TA support team or others?;(3) **resources**, that is, does your program or agency have in-house research staff?; (4) **data availability**; and (5) **data quality**. Consider these factors, then use the following table to list important resources and major challenges that will shape the plan for this test.

Key resources	Key challenges

What are your research questions or learning objectives for the test?

What do you want to learn about the components you are testing?

1.

2.

What approach or method will you use to address your research questions for the test?

Check all that apply.

☐ **Road test.** A road test is an iterative pilot of a solution on a small scale. It is designed to gather feedback about early implementation and help in refining the solution.

☐ **Case study.** A case study documents the components of a solution and the process of a solution's development and refinement. It provides a detailed description of the solution and the experience of implementing it. Such documentation can help programs implement the solution consistently and support the spread of promising innovations.

☐ **Process analysis.** Process analysis is a qualitative method that assesses the phases and steps of a program process or procedure in order to understand how the inputs, outputs, and operations work and relate to one another, sometimes with a focus on diagnosing inefficiencies.

☐ **Outcomes/key performance indicators analysis.** Programs might use surveys or existing program data to analyze quantitatively trends in program outcomes and performance. The analysis provides some indication of the solution's success but does not determine its effectiveness.

☐ **Rapid-cycle experiment.** Testing the effectiveness of a solution requires treatment and control groups to evaluate the impact of a specific solution on program operations. Rapid-cycle experiments can generate evidence on participant outcomes in a relatively short time in order to refine the solution. If a rapid-cycle experiment demonstrates effectiveness, you might consider a more rigorous randomized controlled trial.

☐ **Other (please specify).**

What time period will the test cover?

Indicate the dates and length of time covered by the test. See Table B.1 titled "How will this test unfold" to think through the timeline for the test.

What types of data or information will you collect during the test?

Check all that apply.

Information from or about staff through:	Information from or about clients through:	Information from or about other individuals or groups or the organization or program:
▫ Questionnaire/survey ▫ Interview(s) ▫ Focus group(s) ▫ Human-centered design activity data ▫ Existing data (e.g., administrative data, existing documents) ▫ Other (please specify)	▫ Questionnaire/survey ▫ Interview(s) ▫ Focus group(s) ▫ Human-centered design activity data ▫ Existing data (e.g., administrative data, existing documents) ▫ Other (please specify)	Specify who/what and how.

How will you use this approach and information to address your research questions for the test?

Briefly provide specifics on your design for the test. For example, if you plan a rapid-cycle experiment, you might explain how you will form the intervention and comparison groups and when you will collect information from each group.

What will your iterative testing look like?

Indicate how many tests you plan between [date] and [date]? About how many weeks will each test last?

How will the test unfold?

Use the table below to map the timeline for the test. Be sure to include key steps in the testing process: designing information collection forms and processes, implementing new strategies, start and end dates of your test, and when you will analyze the collected information. The process steps in tan below for each month are suggested benchmarks. Feel free to highlight steps in the process where you think you need additional support. For each bullet, indicate the task, timeline, and responsible staff member.

Table B.1. Timeline table

Timeline: Planning and preparing the test	Timeline: Implementing a solution or new revisions to a solution	Timeline: Test underway	Timeline: Process findings and apply learning
When will you plan and prepare the test? • *Specify task, timeline, responsible staff member*	When and how will you implement the solution or new revisions to the solution?	When will you start the test, and when do you plan to end the test?	When will you aim to present findings to administrators and staff?
What are the major planning steps or pieces? • *Specify task, timeline, responsible staff member*		During what time frame will you collect data or information?	When will you recommend adjustments to the solution?
		When will you analyze data?	When will you implement adjustments to the solution?
			When will you plan and conduct the next test?

Endnotes

[1] The Office of Family Assistance is housed within the Administration for Children and Families, part of the U.S. Department of Health and Human Services.

[2] Key collaborators included the Center on the Developing Child at Harvard University and the Administration for Children and Families (ACF), OPRE.

[3] Throughout this guide, we provide examples of how to use human-centered design activities to advance LI^2 work. We also include a list of human-centered design activities with guidance on how to facilitate them in person or virtually by using electronic tools.

[4] Garvin (1993) of the *Harvard Business Review* defines a learning organization as "an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights."

[5] In our work with TANF programs, we have drawn from research conducted in health care, early childhood, and educational settings, among others.